

What is claimed is:

1. A method of actuating by the piezoceramic for shaft-driving type ultrasonic motor, which is to use the ultrasonic actuator composed by the round metal back plate composite with piezoelectric device, wherein there existing two
5 geometrical orthogonal standing wave or the traveling wave in radial and arc direction under the resonant state of thin plate piezoelectric device;
utilizing such orthogonal vibration wave to form an shaft driving force instead of the traveling wave driven by the multi-electrode conventionally and the triple phase driving traveling waves were generated for motors according to
10 the propagation difference of the wavelength of the driving point.
2. A piezoceramic shaft-driving type ultrasonic motor comprising a hollow structure shell, a shaft, a rotor bearing, a stator bearing seat, a weighted disc, and a stop-push bearing seat;
thereof a rotor bearing and a stator bearing seat used to support the rotating
15 shaft on the upper and lower lateral of said hollow structure shell; said rotating shaft penetrates through a weighted disc vertically, therein the bottom of the rotating shaft settled over said stop-push bearing seat on the thin plate of stator;
which characteristic is on the bottom of the structure shell settling a vibrating thin sheet which could makes the shaft of the rotor to rotate freely on
20 supporting the weighting disc and to drive the thin plate stator to vibrate freely under the frequency of the ultrasonic by means of the input of the A.C. signal and to the output of the vibration energy.
3. The piezoceramic shaft-driving type ultrasonic motor as mention in claim 2, wherein the hollow structure shell could be replaced with L-type mechanical
25 structure body.
4. The piezoceramic shaft-driving type ultrasonic motor as mention in claim 2,

wherein on two end facet of said supporting hollow structure shell is orthogonal to the shaft of the rotor representing the vertical axis.

5. The piezoceramic shaft-driving type ultrasonic motor as mention in claim 2, wherein the supporting rotating shaft mechanism on the upper portion of said
5 hollow structure shell could be connected with the bearing.
6. The piezoceramic shaft-driving type ultrasonic motor as mention in claim 2, wherein the optimum operating frequency of the input A.C. power is 20 kHz ~ 200 kHz.